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Barclay Curle & Co Ld

No 689 - 690.

Framing Profile "ARMATHIA"

ex

*Amstelbrug

690 Fbd

GLASGOW REPORT No. 65929

690 "Empire Highway"

GLASGOW REPORT No. 66280

Fbd 689 "Empire Courage"

GLASGOW REPORT No. 66523

ex

* 689 Empire Courage (~~Now Named~~ PHILIPS WOUWERMAN)

GLASGOW REPORT No. 66732

3½ x 3½

011877-011883-0036

BARCLAY, CURLE & CO. LTD
No 215
DATE 17/2/41
WHITEINCH, GLASGOW

No 681-2 & 689-90
FRAMING PROFILE

Scale:- 1/4" = one foot.
Plan No 9.A.

FOR AIR HOLES IN FRAMES AND BEAMS SEE MIDSHIP SECTION
FRAMES TO BE PUNCHED FOR SPARRING BUT NO SPARRING FITTED

MINISTRY OF SHIPPING NOTE:- FORE & AFT PEAK BULKHEADS AND BULKHEAD 135 TO HAVE BROAD LINERS (TO TAKE ONE ROW OF RIVETS EACH SIDE OF BULKEAD FRAME) IN WAY OF OUTSIDE SHELL STRAKES

SHELTER Dk KNEES. MARK:- "S.K."
UPPER Dk KNEES:- MARK. "U.K."
FORECASTLE Dk KNEE. MARK:- "F.K."
SEE PLAN OF ENGINEERS STORE
KNEE UNDER TONNAGE BHD 15 MARK U.K. 1.
3×3 O.A. Ex STOCK. CUT FROM TR.95.
KNEE ·42
3" FL.
21"
33"
1 KNEE AT FRS. 13, 14, 16-19, 155-160.
2 KNEE ON ALT. FRS 20-38, 42-60, 64-72, 76, 78, 82, 875, 86, 88-92, 95, 97-110, 112-125.
3 KNEE ON ALT FRS 21-39, 41-61, 63-73, 75-79, 81-85, 88-93, 96, 98-109, 113-126
5 KNEES AT FR 143-153
6 KNEES ON ALT. FRS 127-133, 137, 139, 141, 142, 154
7 KNEES ON ALT. FRS 128-140
See section
See section for Shelter deck beam knees
BEAM KNEE AT FR 84 (STBD ONLY)
ROOF OF ENG. STORE 10'-0 BELOW UPPER Dk (STBD ONLY) FR 75 TO 79 MATERIAL FROM U.K.
SHELTER DECK
UPPER DECK
LOWER DECK
FOCSLE DECK
No 5 HATCH
No 4 HATCH
No 3 HATCH
No 2 HATCH
No 1 HATCH
No 5 HOLD
No 4 HOLD
No 3 HOLD
No 2 HOLD
No 1 HOLD
DEEP TANK
BUNKER SPACE
MACHINERY SPACE
PUNCH FOR SPARRING
BEAMS 6 × 3 × ·36 B. ANGS
BEAMS 7 × 3 × ·36 B. ANGS
6" TO SUIT ROLLING
No 5 D.B. TANK
No 4 D.B. TANK
No 3 D.B. TANK
No 2 D.B. TANK
No 1 D.B. TANK
STEM

35

Barclay Curle & Co Ld

No. 689 "ARMATHIA"

"Empire Courage" EX ~~Now Named~~ 'PHILIPS WOUWERMAN'

Shelter Deck (as built).

GLASGOW REPORT No. 66732

011877-011883-0039

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0039

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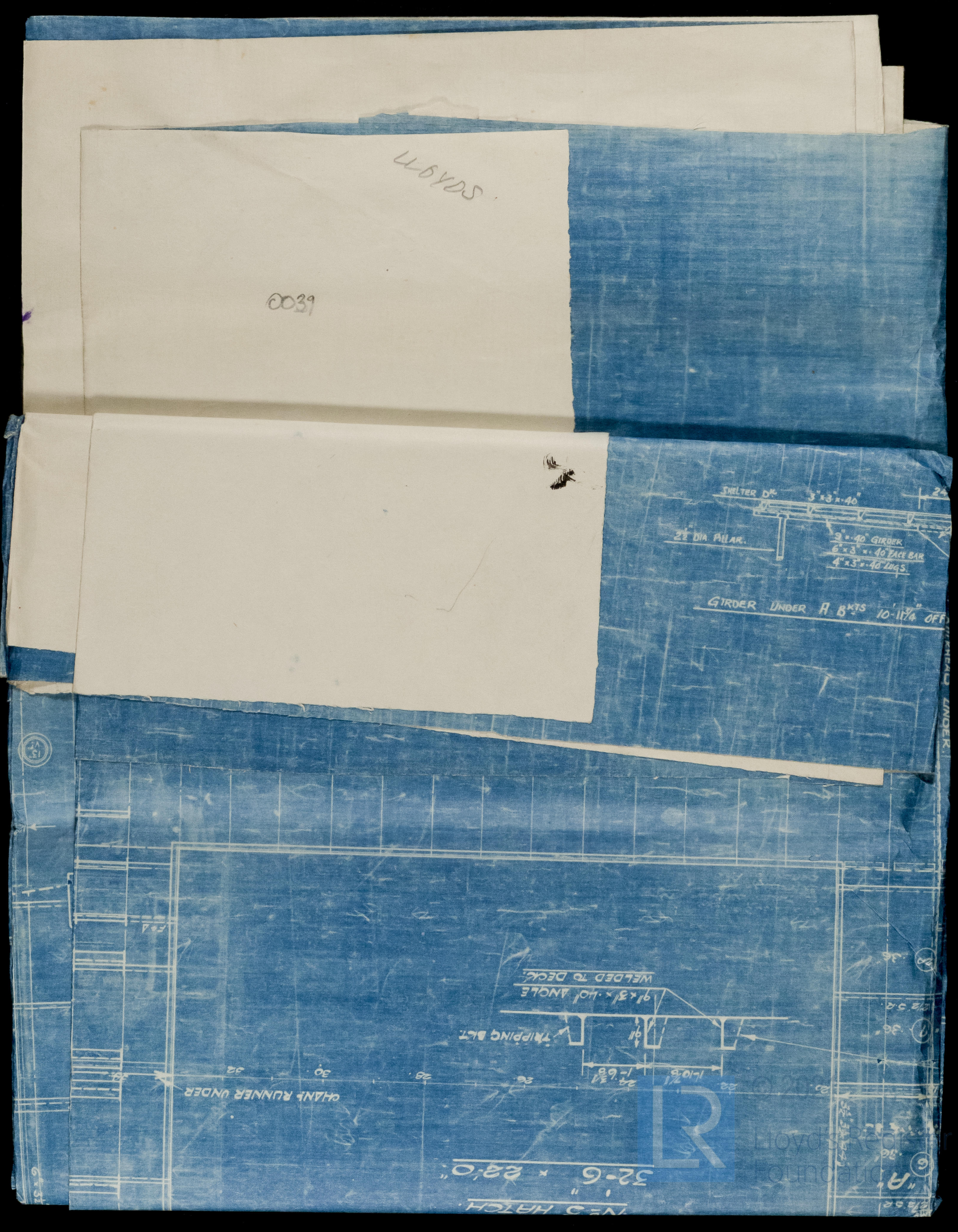
Lloyd's Register
Foundation

LLOYDS

0039


SHELTER DK
3"×3"×.40"
2½" DIA PILLAR
3"×.40" GIRDER
6"×3"×.40 FACE BAR
4"×3"×.40 LUGS
GIRDER UNDER A BKTS 10'11¾" OFF
Nº 3 HATCH
32'-6" × 23'-0"
9"×3"×.40 ANGLE
WELDED TO DECK
TRIPPING BKT
CHANL RUNNER UNDER
"A"

BARCLAY, CURLE & CO. LTD
No
DATE
WHITEINCH, GLASGOW

M.S. "EMPIRE COURAGE"
NOW NAMED
"PHILIPS WOUWERMAN."

Nos 689
SHELTER · DECK · PLATING
SCALE 1/4" = 1 FOOT.
PLAN No B/153

NOTE
SPECIAL CARE TO BE TAKEN TO ENSURE FAIR HOLES THROUGH BEAMS WHERE DECK FLANGE IS 3" & RIVETS 7/8" DIA.

NOTES.
BEAMS · TO · BE · JOGGLED.
STRINGER · PLATES · CARRIED · OUT · TO · SHELL · IN · WAY · OF · SCUPPERS.
THIS · PLAN · TO · BE · WORKED · IN · CONJUNCTION · WITH:—
FRAMING · PLAN · FOR · BEAM · KNEES.
HATCHES + GIRDERS · FOR · TRIPPING · BKTS, LUGS, etc.
SMALL · PILLARS · FOR · RUNNERS + PILLARS · TO · BEAMS.
FOR · AIR · HOLES + STAGING · HOLES · IN · BEAMS · SEE · M.DSHIP · SECTION.
DECK · CAMBER = 14½ ON 28·7½ ½ BREADTH.
HOLES · FOR · VENTS, DERRICK · POSTS, AIR + SOUNDING · PIPES etc. TO · BE · LINED · OFF · AT · SHIP.

FOR · DETAIL · OF · "SHAPES" · OF · HOUSE FRONTS + ENDS etc. SEE · SEPARATE · PLAN.

NOTE:- FOR · CHANNEL · RUNNERS · UNDER DECK · WELDED · TO · BEAMS — SEE PLAN · OF · SMALL · PILLARS, LADDERS etc.

DECK · ON · A · "INSIDE · STRAKE" · OF · SHELL.

BASE · OF · 12" BOLLARD.
BASE · OF · 9" BOLLARD.
TYPICAL · ARRANGEMENT · OF · STIFFENING · UNDER · BOLLARDS.
WINCH · GIRDERS · AT · AFT · END · OF · No 4 HATCH.
HEAVY DERRICK BARREL SEATS TO BE IN LINE WITH WINCH SEATS.
SECTION · THRO' · WINCH · GIRDERS · AT FORWARD END OF No 5 HATCH.
ELEVATION OF GIRDER 23'3½" OFF ℄ TO PORT LOOKING TO PORT
7" × 10" WINCH GIRDERS.
WINCH GIRDERS & BARREL SEATS AFT OF HATCH No 1.
No 5 HATCH. 32'-6" × 22'-0"
No 4. HATCH 32'-6" × 22'-0"
DEEP · TANK · HATCH 15'-0" × 22'-0"
No 3. HATCH. 15'-0" × 22'-0"
No 2. HATCH 32'-6" × 22'-0"
No 1. HATCH. 28'-3" × 22'-0"
STRINGER.
"D" STRAKE.
"C" STRAKE.
"B" STRAKE.
"A" STRAKE.
BEAMS 8" × 3" × 36" B.A.
SECTION. LOOKING AFT.
DETAIL OF STIFFENING UNDER HEAVY DERRICK SOCKET. SCALE 1/8" = ONE INCH.
PLAN · VIEW.

34

Barclay Curle & Co Ld

No 689. "ARMATHIA"

"Empire Courage" Ex ~~Now Named~~

"PHILIPS WOUWERMAN"

Upper Deck (as built).

GLASGOW REPORT No. 66732

011877-011883-0037

LLOYDS

2037

M.S. 'EMPIRE COURAGE'

NOW NAMED

'PHILIPS WOUWERMAN.

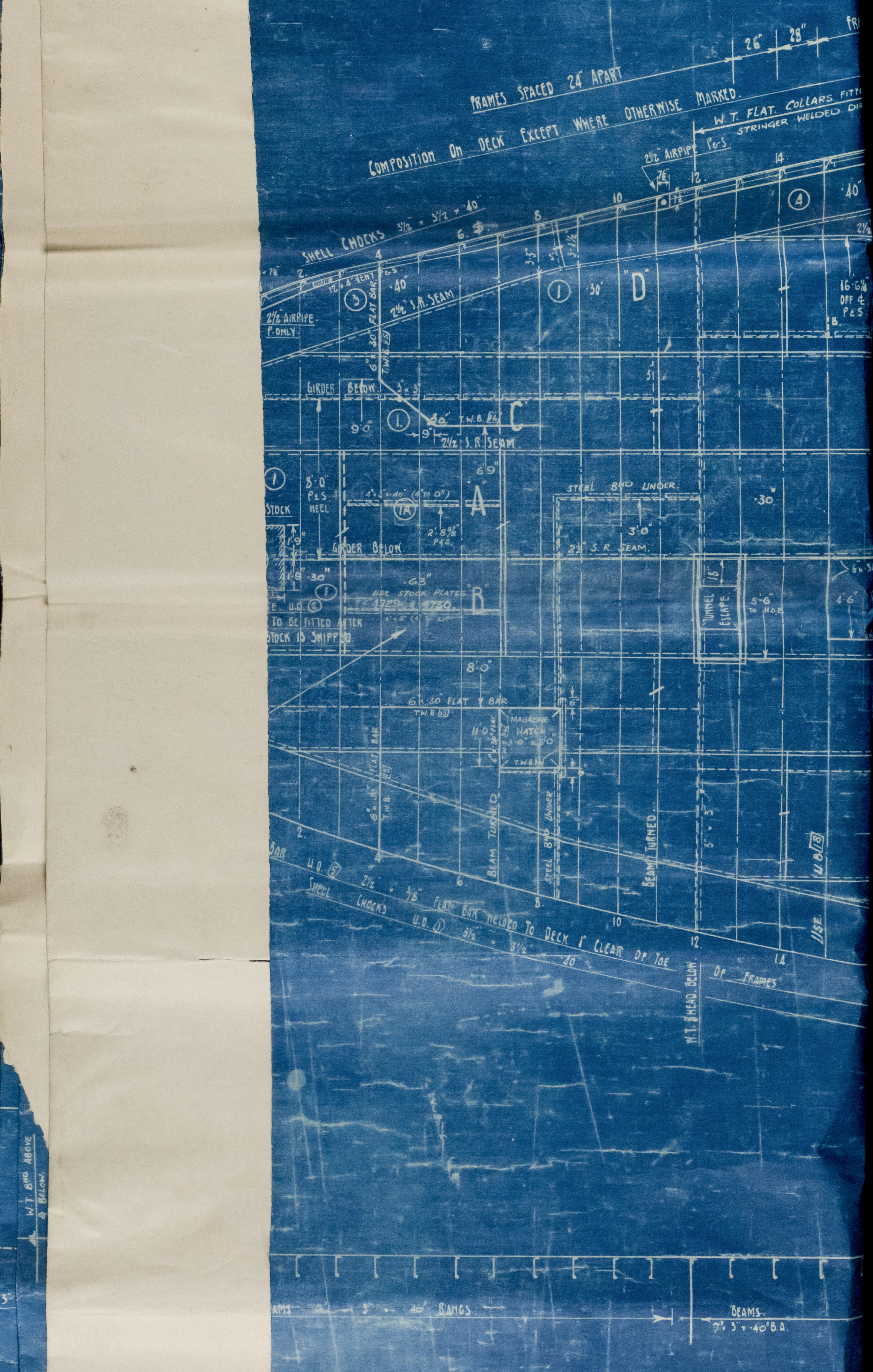
CK PLATING.

NOTE:- SPACING OF H
CLEATS TO BE

FOR DETAILS

AIR HOLES IN
STAGING HOLES

PLATING



26"
28"
FRAMES SPACED 24" APART
COMPOSITION ON DECK EXCEPT WHERE OTHERWISE MARKED.
W.T. FLAT. COLLARS FITT
STRINGER WELDED DIR
2½" AIRPIPE P&S
SHELL CHOCKS 3½" × 3½" × ·40"
12 × 4" VENT P&S
2½" AIRPIPE. P.ONLY
·40"
2½" S.R. SEAM
6" × ·30" FLAT BAR T.W.B. 13
·30"
"D"
·40"
16·6⅛" OFF ℄ P&S
GIRDER BELOW.
3" × 3"
9'·0"
·30" T.W.B. 12
"C"
9"
2½" S.R. SEAM.
6'·9"
8'·0" P&S HEEL
STOCK
4" × 3" × ·40" (4" TO 0")
"A"
2'·8⅝" P&S
STEEL BHD UNDER.
3'·0"
2½" S.R. SEAM.
·30"
GIRDER BELOW.
1'·9"
·30"
·63"
USE STOCK PLATES 4729 & 4730.
"B"
4" × 5" (4" TO 0")
U.O. ②
TO BE FITTED AFTER STOCK IS SHIPPED
TUNNEL ESCAPE 18"
5'·6" TO H.O.B
6" × ·30
4'·6"
8'·0"
6" × ·30" FLAT BAR T.W.B. 15
MAGAZINE HATCH 3'·0" × 3'·0"
11'·0"
T.W.B. 14
6"
6" × ·30" FLAT BAR T.W.B. 15
BEAM TURNED
STEEL BHD UNDER
BEAM TURNED.
3" × 3"
U.B. 18
USE.
BAR U.O. 5 2½" × ⅜" FLAT BAR WELDED TO DECK 1" CLEAR OF TOE OF FRAMES
SHELL CHOCKS U.O. ① 3½" × 3½" × ·40"
W.T. BHEAD BELOW
W.T. BHD ABOVE & BELOW.
BEAMS 3" × ·40" BANGS
BEAMS 7½" 3" × ·40" B.A.
2
4
6
8
10
12
14
①
①A
③
④

M.S. "EMPIRE COURAGE."
NOW NAMED
"PHILIPS WOUWERMAN."

Nos 689

UPPER DECK PLATING.

SCALE 1/4" = ONE FOOT.
PLAN No B.52

LOFT. ① 13/8/40.
PLATER. ② 6/9/40.
MANAGER. ① 6/9/40.

NOTE:- SPACING OF HATCH CLEATS CR. TO CR. NOT TO EXCEED 24", END CLEATS TO BE NOT MORE THAN 6" FROM HATCH CORNERS.

FOR DETAILS OF TRIMMERS ESCAPE HATCHES SEE SEPAPARATE PLAN.

AIR HOLES IN BEAMS 7" AND OVER } SEE MIDSHIP SECTION.
STAGING HOLES IN ALL BEAMS. }

PLATING TO BE JOGGLED.

3/4 L
FRAMES SPACED 30" APART
·1 L
26"
28"
FRAMES SPACED 24" APART
COMPOSITION ON DECK EXCEPT WHERE OTHERWISE MARKED.
W. T. FLAT. COLLARS FITTED AT FRS OR STRINGER WELDED DIRECT TO SHELL
2½" AIRPIPE P. & S.
2½ S.R. SEAM
T.E.
No 5 HATCH.
No 4 HATCH.
No 3 HATCH
ENGINE CASING
No 2 HATCH.
No 1 HATCH.
A
B
C
D
E
1/2 L
SEE PLAN OF CENTRE LINE BULKHEAD FOR CONNECTION TO DECK.

Barclay Curle & Co Ld "ARMATHIA"

No 689. "Empire Courage" Now
NAMED "PHILIPS WOUWERMAN"

Midship Section (as built)

6.90 (Sister to "EMPIRE HIGHWAY") Gla. 66280.

GLASGOW REPORT No. 66732

011877-011883-0040

LLOYDS

0040

M.S. "EMPIRE COURAGE" NOW NAMED "PHILIPS WOUWERMAN."

№ 689. MIDSHIP · SECTION

SCALE ½" = ONE FT.

MLD. DIMS. 410'-0" × 57'-3" × 38'-0" TO SHELTER DK.

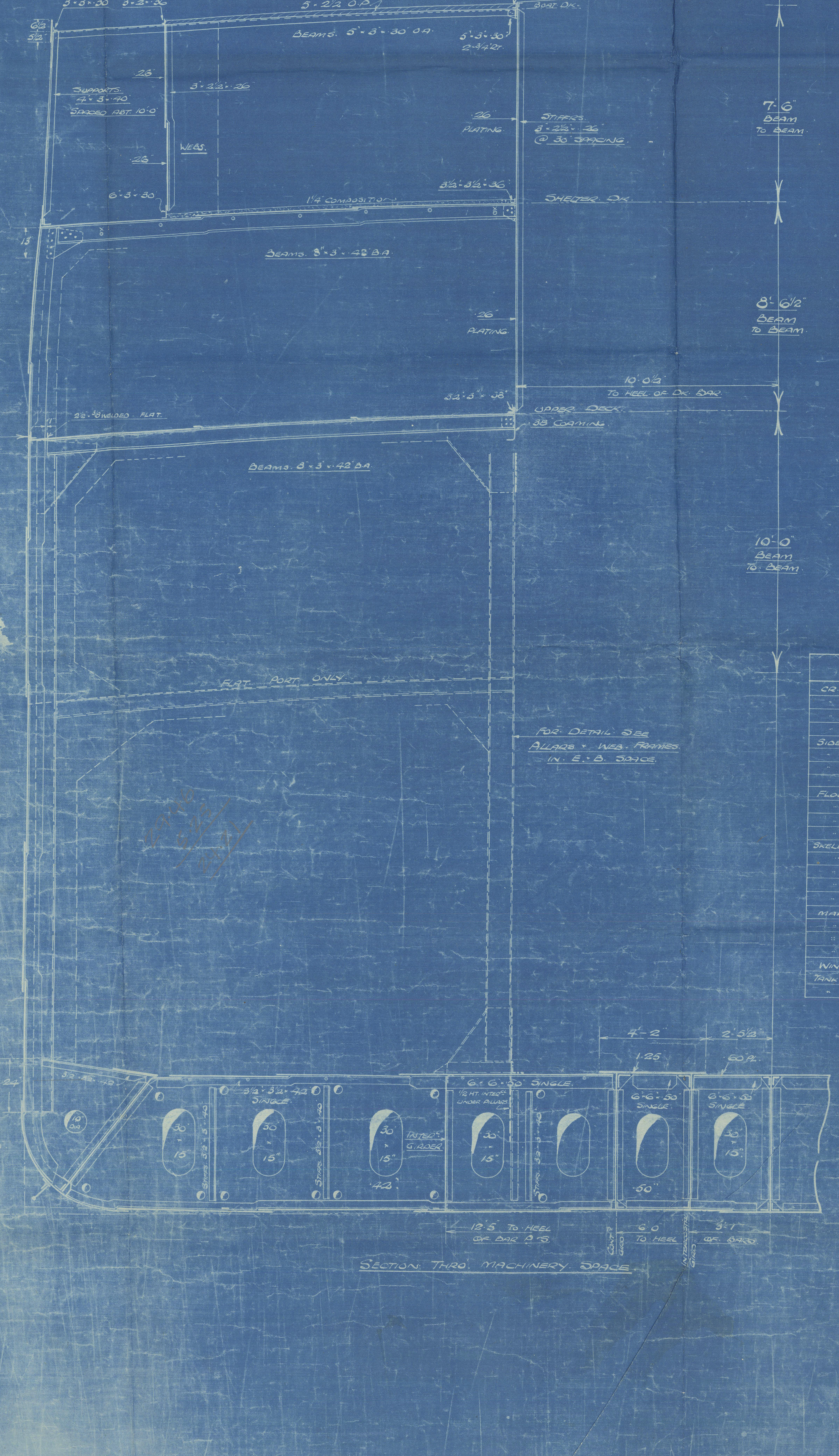
– PLAN № 23/A

TO CLASS 100 A1 LLOYDS WITH FREEBOARD CORRESPONDING TO A DRAFT 18" IN EXCESS OF THAT OF A COMPLETE SUPERSTRUCTURE VESSEL WITH TONNAGE OPENING.

SECTIONS · ARE · 1924 · BRITISH · STANDARD.

EQUIPMENT AS PER RULE SUBJECT TO AGREED REDUCTION IN LENGTH OF CABLE & OMISSION OF 3RD BOWER ANCHOR AS A WAR EMERGENCY MEASURE.

BARCLAY, CURLE & CO. LTD. WHITEINCH, GLASGOW


3" × 3" × ·30
3" × 2 × ·36
5' × 2½ O.P.
3" × 3" × ·30
CASING · TOP CAMBER 4"
BOAT DK.
6½
5½
BEAMS. 5" × 3" × ·30 O.A.
5" × 3" × ·30
2 – ¾ RT.
·26
SUPPORTS.
4 × 3 × ·40
SPACED ABT. 10'·0
3 × 2½ × ·26
WEBS.
·26
PLATING.
STIFFRS.
3 × 2½ × ·26
@ 30" SPACING
7'·6"
BEAM
TO BEAM.
·26
6 × 3 × ·30
1¼ COMPOSITION
3½ × 3½ × ·36
SHELTER DK.
15
BEAMS. 8" × 3" × ·42 B.A.
·26
PLATING.
8'-6½"
BEAM
TO BEAM.
10'·0½
TO HEEL OF DK. BAR.
3½ × 3" × ·38
2½ × ⅜ WELDED · FLAT.
UPPER · DECK.
·38 COAMING.
3½ × 3½ × ·40
SHELL · CHOCKS.
BEAMS. 8 × 3 × ·42 B.A.
10'·0"
BEAM
TO · BEAM.
FLAT · PORT · ONLY.
FOR · DETAIL · SEE
PILLARS + WEB · FRAMES.
IN · E. · B. · SPACE.
24
70
1'0" DIA.
3½ × 3½ × ·42
3½ × 3½ × ·42
SINGLE.
STIFFS. 3½ × 3 × ·40
30" × 15"
42
INTERL. GIRDER
6 × 6 × ·50 SINGLE.
½ HT. INTERCL. UNDER PILLARS
1·25
4'·2
2'·5½
60 PL.
6 × 6 × ·50 SINGLE.
·50
12·5 TO HEEL OF BAR P.S.
CENTRE GIRD.
6'·0 TO HEEL
3'·1 OF BARS
INTERCOSTAL GIRD.
SECTION: THRO. MACHINERY. SPACE.

RIVETING.

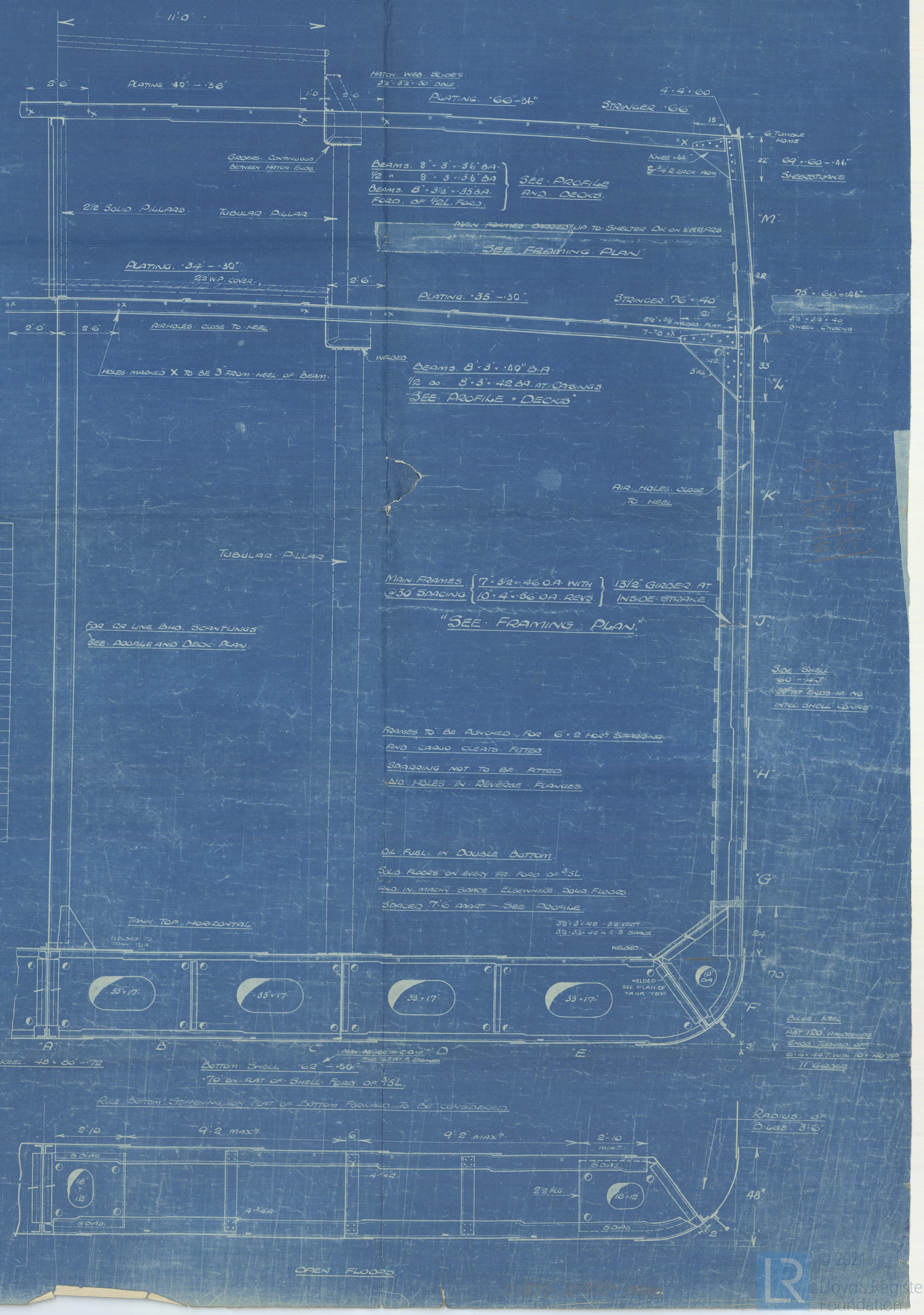
ITEM.	END · LAPS.		EDGE · LAPS.	
	½L.	ENDS.	½L.	ENDS.
KEEL.	4R.	3R.	2R.	2R.
SHELL · BOTTOM.	4R. FOR ½L.		2R.	2R.
" SIDE.	3R.		2R.	2R.
SHEERSTRAKE + STR. UNDER	4R.		2R.	2R.
CENTRE · GIRDER.	3R.	} SEE	DETAILED PLAN	
MARGIN	3R.			
TANK · TOP. CR. STRAKE.	3R.		2R. 2R. O.F.	1R. AFT. 2R. O.F.
" " PLATING.	2R.	2R	1R. 2R. OIL · FUEL.	1R. 2R. O.F.
U.D. STRINGER.	2R.	1R.	1R.	1R.
" PLATING.	2R.	1R.	1R.	1R.
S.D. STRINGER	4R.	2R.	1R.	1R.
" PLATING.	4R.	2R.	1R.	1R.

CAMBER. 14½ ON 57·3.

DOUBLE · BOTTOM.

ITEM.	½ LENGTH.		AT · ENDS.		REMARKS.
	RULE.	AS · FITTED	RULE.	AS · FITTED.	
CR. GIRDER.	43½ × ·54	43½ × ·54	·46		·50 IN ENG. SPACE × 59⅜ DEEP.
" " BTM. ANG.	4 × 4 × ·54 DBL.	4 × 4 × ·54 DBL.	4 × 4 × ·48 DBL. FORD. 4 × 4 × ·52 DBL. AFT. D.B. TANK.		
" " TOP "	3½ × 3½ × ·48 DBL.	3½ × 3½ × ·48 DBL.	3½ × 3½ × ·44 DBL. FRD. 3½ × 3½ × ·50 DBL. AFT. D.B. TANK.		4 × 4 IN WAY OF 1" RIVS.
" " VERT. "	3 × 3 × ·42 SIN.	5 × 3½ × ·42 SING.	3 × 3 × ·42 SING.	5 × 3½ × ·42 SING.	3½ × 3½ × ·42 DBLE. IN E.R.
SIDE. GIRDERS.	·36, ·42 E.R.	·36 ·42 – ·50 IN ER.			
" " BTM. ANG.	3½ × 3½ × ·42 E.R. ·42	3½ × 3½ × ·42	3½ × 3½ × ·48 FR. ⅗L. 3½ × 3½ × ·42 AFT.	3½ × 3½ × ·42	3½ × 3½ × ·42 – ·50 IN E.R.
" TOP "	3 × 3 × ·42 E.R. ·42	3 × 3 × ·42	3 × 3 × ·42	3 × 3 × ·42	6 × 6 × ·50 IN WAY OF ENGINES. 3½ × 3½ × ·42 CLEAR · OF · ENGS.
" VERT "	3 × 3 × ·36 D°	5 × 3 × ·36	3 × 3 × ·36	5 × 3 × ·36	3½ × 3½ × ·42 – ·50 DBLE. IN E.R.
FLOORS.	·36, ·42 ER.	·36 ·42 IN ER.			W.T. FLOORS. ·48
" FRAMES.	3½ × 3½ × ·42	3½ × 3½ × ·42	6 × 6 × ·48 FORD. ½L. 3½ × 3½ × ·42 AFT.	3½ × 3½ × ·48 DBL. ½L. 3½ × 3½ × ·42 AFT.	3½ × 3½ × ·50 AT W.T. FLOORS.
" REV. FRS.	3 × 3 × ·42 3½ × 3½ × ·42 IN E.R.	3 × 3 × ·42 3½ × 3½ × ·42 IN E.R.			6 × 6 × ·50 UNDER ENGINES. BACK BARS AT CR. LINE FORD. ·6L.
" STIFFENERS.	3 × 3 × ·36	3 × 3 × ·36 3½ × 3 × ·40 E.R.			ON WIDE SPACED FLOORS BETWEEN MANHOLES. AND ON EVERY FLOOR FORD. OF FORD. ⅗L.
SKELETON · FLOORS.	·36	·36			
" " FRS.	8 × 3½ × ·33 BA	8 × 3½ × ·36 B.A.			
" " REV. FRS.	8 × 3 × ·33 BA	8 × 3 × ·36 BA			
" " STRUTS.	6 × 3½ × ·40 A.	6 × 3½ × ·40 A.			
" " SIDE GIRD. ANGLE.	6 × 3 × ·40 A.	6 × 3 × ·40 A.			
MARGIN.	38¼ × ·53	AFT. 58 FRD. 84 × ·53			
" SHELL · BAR.	4 × 4 × ·53	4 × 4 × ·53			
" VERT. + OUTSIDE.	3½ × 3½ × ·42	3½ × 3½ × ·42			
" " INSIDE.	3½ × 3 × ·42, ·42 ER.	3½ × 3½ × ·42 ·42 ER.			
WING · BKTS.	·45	·45			
TANK · TOP. CR. STRAKE.	48 × ·52	·52	·44		
" PLATING.	·43 ·52 E.R.	·43 ·52 E.R.			·51 UNDER HATCHES. IN LIEU OF CEILING.

RIVETING – LIST.	SPACING.
FRAMES · TO · SHELL IN DEEP TANKS, AFTER PEAK TANK AND FROM KEEL TO WELL ABOVE L.W.L. FOR ·16L. FROM STEM.	5½ DIAS.
FRAMES TO · SHELL · ELSEWHERE.	7 DIAS.
FRAMES · TO · FLOORS · IN · PEAKS AND DEEP · TANKS.	6 "
" " " ON FLAT · OF FLOOR FORD. AND · UP TO · L.W.L. FOR · 16L FROM STEM.	6 "
FRAMES · TO · FLOORS · ELSEWHERE.	7 "
REVERSE · FRAMES TO TANK TOP. UNDER ENGINE · SEATING.	4½ "
" " " " AT · CENTRE · STRAKE FORD. ·5L.	4 "
" " " " ON FLAT · OF · FLOOR FORWARD.	6 "
" " " " ELSEWHERE.	7 "
" " FLOORS UNDER ENGINE · SEATING.	5½ "
" " " ON FLAT · OF · FLOOR FORD.	6 "
" " " ELSEWHERE.	7 "
CENTRE · GIRDER · BOTTOM · ANGLES. TO · SHELL.	5½ "
" " " VERTICAL · FLANGE	5½ "
" " "	"
" " TOP ANGLES BOTH FLANGES UNDER ENGINES EACH ROW.	5½ "
" " " " " FORD. OF ·5L AMIDSHIPS.	6 "
" " " " " OF EACH ROW ELSEWHERE.	7 "
" " VERTL. CONNN. TO FLOORS BOTH FLANGES.	5 "
SIDE GIRDERS · BOTTOM ANGLES ON FLAT OF FLOOR FORD. BOTH FLANGES.	5½ "
" " " " ELSEWHERE.	6 "
" " TOP " UNDER ENGINE SEATING.	4½ "
" " " " ON FLAT. OF FLOOR FORD.	5½ "
" " " " ELSEWHERE.	6 "
" " VERTICAL. " ON FLAT OF FLOOR FORD. BOTH FLANGES.	5 "
" " " " ELSEWHERE.	7 "
MARGIN SHELL · ANGLES – BOTH · FLANGES.	5 "
" VERTICALS · TO · FLOORS · AND · WING · BRACKETS.	5 "
BEAMS · ON CROWN · OF · PEAK AND DEEP · TANKS.	6 "
" ELSEWHERE.	7 "


11'·0"
2'·6"
PLATING ·40" – ·36"
1'·0
2'·6
HATCH · WEB · SLIDES
3½ × 3½ × ·50 DBLE.
PLATING. ·66" – ·36"
4 × 4 × ·60
STRINGER ·66"
15
6 TUMBLE HOME.
GIRDERS · CONTINUOUS BETWEEN · HATCH · ENDS.
BEAMS. 8" × 3" × ·36" BA.
½ " 8" × 3" × ·36" BA
BEAMS. 8" × 3½" × ·35 BA.
FORD. OF ½L. FORD.
SEE · PROFILE AND · DECKS.
KNEE ·44"
5 – ¾ R EACH · ARM
22"
69" × ·60" – ·46"
SHEERSTRAKE
2½" SOLID · PILLARS.
TUBULAR · PILLAR
"M"
MAIN FRAMES CARRIED UP TO · SHELTER · DK. ON EVERY FRS.
"SEE · FRAMING · PLAN."
PLATING. ·34" – ·30"
2½ W.P. COVER.
2'·6"
PLATING. ·35" – ·30"
STRINGER 76" × ·40"
2R.
75" × ·60" – ·46"
3½ × 3½ × ·40
SHELL · CHOCKS.
2'·0"
2'·6"
AIRHOLES · CLOSE · TO · HEEL.
21"
1"
2½ × ⅜ WELDED · FLAT.
7 – ⅞
WELDED
HOLES · MARKED X TO BE 3" FROM · HEEL · OF · BEAM.
BEAMS. 8" × 3" × ·40" B.A.
½ do. 8" × 3" × ·42 BA. AT · CASINGS.
"SEE · PROFILE + DECKS"
·42
33"
"L"
AIR · HOLES · CLOSE TO · HEEL.
"K"
TUBULAR · PILLAR
MAIN · FRAMES @ 30" SPACING { 7" × 3½" × ·46 O.A. WITH 10" × 4" × ·56 O.A. REVS. } 13½" GIRDER · AT INSIDE · STRAKE.
"SEE · FRAMING · PLAN."
"J"
FOR CR. LINE BHD. SCANTLINGS SEE · PROFILE AND DECK · PLAN.
SIDE · SHELL ·60" – ·40"
·38" AT ENDS IF NO INTL. SHELL CONNS.
"H"
"G"
TANK · TOP · HORIZONTAL.
WELDED · TO TANK · TOP.
3½ × 3" × ·42 – 3½ VERTL.
3½ × 3½ × ·42 IN E.B. SPACE.
WELDED.
24"
1'0" DIA
WELDED SEE PLAN OF TANK TOP.
70"
33" × 17"
"F"
3"
"A"
B
C
D
E
KEEL 48 × ·80" – ·72
MAY BE ·60 AT C.D.E. AND ·65 AT F. STRAKES
BOTTOM · SHELL ·62" – ·50"
·70 ON FLAT · OF · SHELL · FORD. OF ⅗L.
BILGE · KEEL
ABT. 120' AMIDSHIPS
ENDS · TURNED · OFF
6 × 4 × ·44 T. WITH 10 × ·40 BP.
"11" GIRDER.
RULE BOTTOM STIFFENING ON FLAT OF BOTTOM FORWARD TO BE CONSIDERED.
RADIUS · OF BILGE 3'·6"
2'·10
9'·2 MAXM.
6"
9'·2 MAXM.
2'·10" MINM.
5 DIAS.
18" × 12"
4 – ¾ R.
2½ FLG.
48"
2"
OPEN · FLOORS

OIL · FUEL · IN · DOUBLE · BOTTOM.

SOLID · FLOORS · ON EVERY · FR. FORD. OF ⅗L AND · IN · MACHY. SPACE. ELSEWHERE · SOLID · FLOORS. SPACED 7'·6" APART – SEE · PROFILE.

FRAMES · TO · BE · PUNCHED · FOR 6 × 2 HORL. SPARRING AND · CARGO · CLEATS · FITTED

SPARRING · NOT · TO · BE · FITTED

NO · HOLES · IN · REVERSE · FLANGES.

③

Barclay Curle & Co Ld

Nos 689 - 690

Rudder & Sternframe.

*Amstelbrug x

690 Fbd

GLASGOW REPORT No. 65929

690 "Empire Highway"

GLASGOW REPORT No. 66280.

Fbd 689 Empire Courage

GLASGOW REPORT No. 66523

689 Empire Courage (NOW PHILIPS WOUWERMAN)

GLASGOW REPORT No. 66732

M.V. CERAM sister to

Napier Star

011877-011883-0038

27 FEB 1941

Nos 681-2 & 689-90 PLAN No 2.D.

RUDDER & STERNFRAME.

SCALES:- ½" & 1½" = 1'-0".

BARCLAY, CURLE & CO. LTD.
No 452
DATE 21-2-41
WHITEINCH, GLASGOW

TO B.S. ✳ TESTS.

SCANTLINGS ON PLAN MUST BE ADHERED TO AS PAYMENT WILL BE ON WEIGHT CALCULATED THEREFROM.

AREA OF RUDDER ABAFT ℄ OF PINTLES.	151 SQ. FT.
C.G. OF " " " " "	4 FT.-6 INS.
LENGTH OF SHIP.	410 FT.-0 INS.
DRAFT " "	25 FT.-10⅝ INS.
SPEED " "	12½ KNOTS.

SCANTLINGS INCREASED OVER RULE IN ACCORDANCE WITH MINISTRY OF SHIPPING EMERGENCY REQUIREMENTS AS FOLLOWS:- RUDDER STOCK, 10% OVER RULE; TRANSOM POST, 15% OVER RULE;

STERNFRAME OF CAST STEEL WITH GUDGEONS CAST ON. PATTERNS TO BE INSPECTED BY SHIPBUILDERS REPRESENTATIVE BEFORE WORK IS COMMENCED. FULL SIZE SECTIONS WILL BE SUPPLIED AND SHOULD BE WORKED TO IN PREFERENCE TO FIGURES ON THIS PLAN. ALL APPROXIMATE FIGURES TO BE VERIFIED BEFORE WORK IS COMMENCED. ALL RIVET HOLES TO BE DRILLED BY MAKERS AT THEIR WORKS TO INFORMATION ON THIS PLAN. CENTRE LINE OF SHIP TO BE CUT AT BOTTOM & BACK OF CASTING & AT POINTS OF ALL WEBS. LINE OF CENTRE OF SHIP TO BE CUT IN ALONG BOTTOM & BACK OF STERNFRAME AND AT POINTS OF ALL WEBS BY MAKERS AT THEIR WORKS.

RUDDER FRAME OF CAST STEEL WITH PINTLE BOSSES CAST ON. FOR EXACT POSITION OF RUDDER ARMS A BATTEN WILL BE SUPPLIED BY SHIPBUILDERS, GIVING EXACT POSITIONS OF PINTLE BOSSES, ALSO LENGTHS ETC. OF RUDDER STOCK. ALL RIVET HOLES TO BE DRILLED BY MAKERS AT THEIR WORKS TO INFORMATION ON THIS PLAN

RUDDER STOCK OF FORGED INGOT STEEL TO BE MACHINED AS NECESSARY IN WAY OF QUADRANT ETC.

PINTLES, WITH NUTS, BRASS SLEEVES & SPLIT PINS WILL BE SUPPLIED BY RUDDER MAKERS.
LIGNUM VITAE BUSHES & HARD STEEL DISC WILL BE SUPPLIED BY STERNFRAME MAKERS.

NOTE:- MINISTRY OF SHIPPING INCREASES INCLUDE:-
RUDDER STOCK INCREASED 10% IN ~~STRENGTH~~ area OVER RULE.
TRANSOM POST > RULE LENGTH + 15%
SCANTLINGS OF RUDDER PARTS excepting pintles ARE IN PROPORTION TO INCREASED RUDDER STOCK ACCORDING TO RULE.

ALL RIVETS TO HAVE COUNTERSUNK HEADS AND TO FINISH FLUSH WITH RESPECTIVE SURFACES. WHERE THICKNESS OF RUDDER CASTING EXCEEDS 5" RIVET HOLES 29/32" SUITABLE FOR ⅞" DIAR. FITTED RIVETS. WHERE LESS THAN 5" RIVET HOLES TO BE 15/16" FOR ⅞" DIAR. RIVETS.

RUDDER TO BE COATED WITH BITUMINOUS COMPOSITION.

Geo. Thomson

British Corporation	(2)	26.1.40
Engine Works.	(1)	30.1.40
Loft.	(1)	26.1.40
Plater	(1)	21.2.40
Fitter	(1)	21.2.40
British Corporation	(2)	27.2.40
Loft	(1)	27.2.40
Beardmores	(2)	14.2.40
Beardmores	(2)	28.2.40

RUDDER AT 60°
STOCK AT 40°
1" DIA. PINCH SCREW.
KEYWAY 2¾"-2"× 1" DEEP.
BOLTS 3⅜" DIAR. (FITTED).
PLAN OF COUPLING.
SPLIT PIN
END ELEVATION OF COUPLING.
½" RAD.
3½" × 3" × ·40 STIFFERS.
3" TO PLATE ¾" RIVETS.
SECTION THRO' RUDDER.
CONTOUR OF FIN AT ITS LONGEST POINT.
½" FIN PLATE.
EYEBOLT FOR LIFTING PURPOSES.
MACHINED
COLLAR FORGED ON RUDDER STOCK TO SUIT RUDDER CARRIER SEE SEPARATE DETAIL.
5/8" LIGNUM VITAE.
3/8" BRASS SLEEVE.
1/32" CLEARANCE
LOCKING HEAD ON TOP PINTLE
UPPER PINTLES.
MID PINTLES FLUSH WITH BOTTOM OF GUDGEON.
DIAR. OF LOCKING HEAD.
SPANNER FOR 4" NUT.
MOVEMENT REQUIRED TO TURN NUT THROUGH 60°
PLAN OF RUDDER OVER TO 38° FOR UNSHIPPING PINTLE NUT
4" DIA. WHIT. NUT.
HARD STEEL WASHER.
¾" DIA. HOLE.
CHECK
LOWER PINTLE.
RUDDER PLATE ·50"
1 ROW ¾" RIVS.
⅞" DIA. TAPS
6" AT XX.
SECTION CLEAR OF PINTLES.
⅞" DIA SCREW PLUG BY MAKERS OF RUDDER CASTING
DRAIN HOLE AS SHOWN ON M RUDDER
SECTION THRO' BOTTOM ARM OF RUDDER.
SCARPH PLANED.
LOOKING FORWD.
DETAIL OF SCARPH "A"
STEEL TURNED FITTED RIVETS 1⅛" DIAR.
INNER ROWS TO BE WELL FLUSED.
OUTER ROWS TO TAKE FINPLATES.
RUDDER PLATES ·50"
LOCKING HEAD.
SCARPH "A"
DRAIN PLUG
BASE LINE
WEBS ⅞" THICK
2 ROWS 1⅛" DIAR. RIVETS.
·72" CHECK
SECTION AT AA.
SECTION AT FR.3.
SECTION 12" FWD. FR.3.
SECTION AT FR.4.
SECTION AT FRS 2 & 3
SECTION AT FR.4.
SECTION AT A.P. LOOKING FORWD.
SECTION AT 1'-9" FWD. A.P.
1'-3" RAD.
FINISHED.
EDGE OF SHELL PLATING
3 ROWS TO TAKE SHELL
RIVETS MARKED ⊗ TO BE WELL FLUSHED.
STEEL TURNED (FITTED) RIVETS 1¼" DIAR. SPACED 5⅝" CR. TO CR.
2'-1" ABOVE BASE.
DETAIL OF SCARPH "B"
LOOKING FORWARD.

681-2 RUDDER & STERNFRAME 2D

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